[0064] The selected SFN of the cell timing provides the time occasion when the broadcast is to be performed. Together with the channel selection, the nodes which may select the same beacon channel may be resolved to transmit in different occasions to minimize possible collision of broadcasts.

[0065] According to an embodiment, a node listens to the selected channel at the selected occasion prior to broadcasting. That is, before the node performs the beaconing, it listens to the channel it intends to transmit the beacon. The reason for listening is that if a beacon signal from another node is detected on the same beacon channel, the listening node obtains knowledge that another node has selected the same channel and the same occasion for broadcasting. As a result, the listening node may restrain from the broadcast at the current occasion if another signal is detected on the listened channel. The listening node may then perform at least one of the following: causing the broadcast on the same channel at next occasion in the set of occasions, and causing a broadcast on a randomly selected channel. The broadcast on the same channel at next occasion in the set of occasions may denote broadcasting at occasion **328** of FIG. **3** if the current occasion is **326**. In other words, the node may postpone the broadcast by a period of Ti. On the other hand, the node may cause a broadcast on a randomly selected channel from the set of channels. The broadcast on the randomly selected channel may take place at the next scheduled occasion, i.e., in this case the node postpones the broadcast by a period T_0, if T_0 is the selected interval of the scheduled occasions. The node may then listen to the channel again until it finds a free channel at a certain occasion. After finding a free channel at the certain occasion, the node may start beaconing (broadcasting) on the selected channel and occasion with the interval of T_0.

[0066] However, collision may happen when at least two nodes in proximity of each other select the same channel to listen at the same time and detect the beacon channel is free. According to an embodiment shown in Figure s, at least one node **500** detects a collision **524** of broadcasts **521** and **523** in the D2D communication network. The nodes involved in the collision **524** may be nodes **520** and **522** transmitting the broadcasts **521** and **523**, respectively. The collision **524** is detected by listening **526** the D2D network at intervals of Ti, as explained referring to FIG. **3**. When the node **500** detects a collision, the node **500** causes a broadcast **528** comprising information regarding the collision. Naturally the broadcast **528** may include also information elements of the node **500**, but in addition to those, it comprises information revealing a detected collision. The information may reveal which nodes were involved in the collision **524**, for example.

[0067] As the node **520**, **522** detects the at least one broadcast **528**, it may determine a probability for at least one of the following: changing the channel for broadcasting, changing the node-specific schedule of occasions for broadcasting, and performing the broadcast at the next scheduled occasion. The probability is inversely proportional to the number of nodes involved in the collision **524**. For example, if many nodes are involved, then the node **520**, **522** has-a low probability in applying the same channel at the next scheduled occasion, or applying the next scheduled occasion on the same channel, for instance. Thus, the node **520**, **522** may be configured to randomly select a beacon channel to transmit its beacon message in the next scheduled occasion or select the same beacon channel in other beaconing occasion than the current selected one. Alternatively or in addition, the node **520**, **528** may apply the determined probability in deciding whether to broadcast at all at the next scheduled occasion. If the node **520**, **522** decides not to broadcast at next occasion i+1, then the node will perform the broadcast according to a higher probability at the occasion i+2. This way, it is likely that the next broadcasts from the two nodes **520** and **522** involved in the collision will not collide.

[0068] Further, according to an embodiment, in D2D network in which only active nodes are broadcasting, the eNB of the cell may configure those active nodes which may be involved in collision with at least one node-specific probability for at least one of the following: changing the node-specific channel for broadcasting, changing the node-specific schedule of occasions for broadcasting, and performing the broadcast on the thereafter valid apparatus-specific channel and apparatus-specific schedule of occasions (persistent beacon transmission). In other words, the node receives the at least one probability giving guidance to collision avoidance.

[0069] Further, as shown in FIG. **7**, the eNBs **700** and **710** may coordinate with each other over the X2 interface **740**. As a result, the eNBs **700** and **710** (or one of them) may pre-determine and configure the identification information of the nodes **720**, **722**, such as the C-RNTI, to be used in the broadcast channel and occasion selection in order to minimize the risk of a collision. In other words, the node **720**, **722** receives identification information from the eNB **700**, **710**, wherein the identification information is controlled by at least one eNB **700**, **710**.

[0070] In order to obtain minimum overhead and efficient data compression related with data transmissions via beacon channels the node of broadcast may, according to an embodiment, associate at least part of the information related to the properties of the node in the index of the channel and the occasion by selecting a specific channel and a specific occasion from the sets of indexed channels and indexed occasions, respectively. This way, the information is not only within the signals transmitted on the beacon channel but also with the position or index of the employed beacon channel.

[0071] A node employing the D2D communications in mobile cellular system will typically receive beacon signals from a plurality of network nodes in its vicinity. Establishing a connection to one or some of those nodes consume radio resources. The maximum cell throughput is achieved when the most suitable counterpart (s) for communication are selected. Therefore, one of the key points in the D2D network is to al-low fast and efficient selection of counterparts for the D2D communication. This is ensured by associating certain information, such as the service request of the node and the routing capabilities of the node, in such a way that the certain information is easily obtained by the receiving node.

[0072] A node may decide on potential candidates for connection establishment based on the received signal quality. Alternatively or in addition, according to an embodiment shown in FIG. **6**, a node **600** detects broadcasts **616** to **620** from other nodes **610** to **614** in the device-to-device communication network. The node detects the broadcasts **616** to **620** by listening to **622** to **626** the broadcasts **616** to **620** at least at some of the intervals of Ti. The node **600** therefore obtains the information associated in the channel and occa-